REMARKS

Summary of Rejections

The Examiner rejected claims 1, 2, 5-9, 12, 13, 15-19, 24, 25, 28, 29, 31-34, 37, 39, 40, 42, and 43 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,968,349 to Owen et al. (Owen) and U.S. Patent No. 4,864,616 to Pond et al. (Pond), and U.S. Patent Application Publication No. 2003/0023850 to Brown et al. (Brown), and rejected claims 7, 14, 23, 30, 38, and 44 under 35 U.S.C. §103(a) as unpatentable over Pond and U.S. Patent No. 6,557,044 to Cain et. al. (Cain).

Claims 1, 2, 5-9, 12-18, 21-25, 28-34, 37-40, 43, and 44 are pending.

Rejections under 35 U.S.C. §103

The Examiner rejected claims 1, 2, 5-9, 12, 13, 15-19, 24, 25, 28, 29, 31-34, 37, 39, 40, 42, and 43 under 35 U.S.C. §103(a) as unpatentable over Owen in view of Pond, and in further view of Brown. Applicants respectfully traverse this rejection.

Claim 1 recites the following features:

> **receiving a second data record to be stored on a single database, wherein the database comprises a first data record;**
> **storing the second data record on the database, wherein the second data record is stored consecutive to the first data record;**
> retrieving a first integrity checksum stored with the first data record previous to the second data record;
> **computing a second integrity checksum for the second data record with a cryptographic method using a storage key, the retrieved first integrity checksum and the second data record, wherein the storage key represents an identity of a signing entity authorized to sign data records**;
> storing the second integrity checksum on the database; and
> configuring the retrieved integrity checksum for a first row of the database to be a generated initialization vector or a digital signature of a signing entity.

Emphasis added.

In some implementations consistent with claim 1, a checksum is computed with a cryptographic method from a second data record, a checksum from a previous (e.g. "first") data record, and a storage key. Thus, if a row (e.g. a first data record) is deleted from the data base, the checksum will detect the deletion because each checksum calculation depends on the checksum of a prior record, providing thus a chain of integrity for the database.

In contrast, Owen discloses calculating a validation value for data and metadata in an old record before the record is changed and posted to a journal. In short, Owen computes the validation value to validate the change value posted to the journal. Specifically, Owen calculates the validation value by computing a checksum using data in an old record and metadata for the old record. Specifically, Owen states:

> Note that the algorithm used to generate the validation value in step 1120 of method 1100 in FIG. 11 must be the same as the algorithm used to generate the validation value in step 1230 of method 1200 in FIG. 12. This assures that the validation values will match when the database record is in the expected state just before applying the change represented by the journal entry. In the preferred embodiments, **the validation value comprises a checksum that is computed using both the data in the old record and the metadata for the old record.** Another type of suitable validation value is a cyclic redundancy check (CRC) that provides a unique value that indicates the state of the record before applying the change. The preferred embodiments expressly extends to any and all variations of validation values that can be computed or generated that uniquely represent the state of the record just before applying the change reflected in the journal entry.

Owen, col. 8 lines 38-54. Emphasis added. The Examiner alleges that the Owen's checksum calculated using an old record and metadata for the old record corresponds to computing an integrity checksum using a storage key, an integrity

checksum for a first record, and a second data record. However, a careful scrutiny reveals that Owen merely computes a checksum using an old record and the metadata for the old record, not a storage key, an integrity checksum for a first record, and a second data record,

It would therefore be a clear error to equate Owen's checksum to the following features of claim 1: "receiving a second data record to be stored on a single database, wherein the database comprises a first data record;" "storing the second data record on the database, wherein the second data record is stored consecutive to the first data record;" and "computing a second integrity checksum for the second data record with a cryptographic method using a storage key, the retrieved first integrity checksum and the second data record, wherein the storage key represents an identity of a signing entity authorized to sign data records." Although Pond discloses cryptographically labeling electronically stored data, Pond fails to cure the aforementioned deficiencies of Owen. Moreover, although Brown discloses a method for calculating checksums of recorded message entries using a public key cryptography Brown fails to cure the aforementioned deficiencies of Owen and Pond.

In view of the foregoing, claim 1 is allowable over Owen, Pond and Brown, whether these references are taken individually or in combination, and the rejection under 35 U.S.C. §103(a) of claim 1 as well as claims 2, 5, 6, and 7, at least by reason of their dependency, should be withdrawn.

Independent claims 8, 15, 17, 24, 31, 33, and 39, although of different scope, include similar features as noted above with respect to claim 1. For at least the reasons noted above with respect to claim 1, independent claims 8, 15, 17, 24, 31, 33, and 39 as

well as claims 9, 12, 13, 16, 18, 25, 28, 29, 32, 34, 37, 40, 42 and 43, at least by reason of their dependency, are allowable over Owen, Pond and Brown, whether these references are taken individually or in combination, and the rejection of those claims under 35 U.S.C. §103(a) should be withdrawn.

The Examiner rejected claims 7, 14, 23, 30, 38, and 44 under 35 U.S.C. §103(a) as unpatentable over Owen in view of Pond, and Cain. Applicants respectfully traverse this rejection.

Claim 7 depends from claim 1 and includes all the feature recited therein including, for example, "receiving a second data record to be stored on a single database, wherein the database comprises a first data record;" "storing the second data record on the database, wherein the second data record is stored consecutive to the first data record;" and "computing a second integrity checksum for the second data record with a cryptographic method using a storage key, the retrieved first integrity checksum and the second data record, wherein the storage key represents an identity of a signing entity authorized to sign data records." Claims 14, 23, 30, 38, and 44, although of different scope, includes features similar to the ones noted with respect to claim 7. For at least the reasons noted above, neither Owen nor Bond discloses or suggests these noted features. Although Cain discloses routing database information, Cain fails to cure the noted deficiencies of Owen and Bond. Therefore, claims 7, 14, 23, 30, 38, and 44 are allowable over Owen, Pond and Cain, whether these references are taken individually or in combination, and the rejection of those claims under 35 U.S.C. §103(a) should be withdrawn.

CONCLUSION

On the basis of the foregoing amendments, the pending claims are in condition for allowance. It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Applicant is concurrently filing herewith a Petition for a one-month extension of time with the requisite fee. Authorization for a credit-card payment of the filing fees mentioned above is submitted herewith. No additional fees are believed to be due, however the Commissioner is authorized to charge any additional fees or credit overpayments to Deposit Account No. 50-0311, reference No. 39700-612001US/NC43225US. If there are any questions regarding this reply, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

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